

**ABSTRACT**

The invention relates to a pn-semiconductor material that can be obtained by a method comprising in  
5 succession the following steps:

- a step in which a substrate made of a porous oxide ceramic is functionalized by chemical grafting of one or more compounds containing at least one group that can be polymerized with one or more  
10 precursors of an electrically conducting polymer and at least one group able to be chemically grafted onto said substrate;

- a step in which said substrate thus functionalized is impregnated with a solution  
15 containing said precursor(s); and

- a step in which said precursor or precursors are polymerized.

Application of these materials to photovoltaic cells.